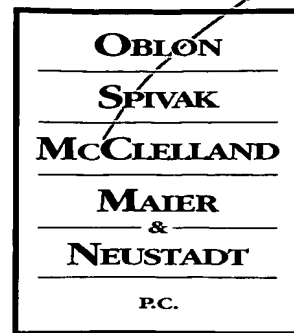




Docket No.: 259279US0PCT

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313



ATTORNEYS AT LAW

RE: Application Serial No.: 10/509,681
Applicants: Hajime KITANO, et al.
Filing Date: October 12, 2004
For: POLYMER COMPOSITION AND USES THEREOF
Group Art Unit: 1711
Examiner: MULLIS, J.C.

SIR:

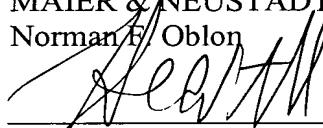
Attached hereto for filing are the following papers:

Appeal Brief

Our credit card payment form in the amount of **\$500.00** is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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DOCKET NO: 259279US0PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
HAJIME KITANO, ET AL. : EXAMINER: MULLIS, J.C.
SERIAL NO: 10/509,681 :
FILED: OCTOBER 12, 2004 : GROUP ART UNIT: 1711
FOR: POLYMER COMPOSITION AND :
USES THEREOF :

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313-1450

SIR:

This is an appeal of the Final Rejection dated March 22, 2006 of Claims 1 and 4-10.

A Notice of Appeal was timely filed on June 22, 2006.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Kuraray Co., Ltd. having an address 1621,
Sakazu, Kurashiki-city, Okayama Pref., Japan.

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II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative and the assignee are aware of no appeals, interferences, or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1 and 4-10 stand rejected and are herein appealed. Claims 2, 3 and 14-20, the remaining claims in the application, are objected to, but are otherwise allowable.

IV. STATUS OF THE AMENDMENTS

An Amendment under 37 CFR 1.116 was timely filed on May 12, 2006. In a corrected Advisory Action entered June 8, 2006, the Examiner indicated that upon the filing of an appeal, the amendment will be entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent Claim 1 is drawn to a polymer composition, comprising:

a block copolymer (a) comprising a polymer block A, which comprises mainly an α -methylstyrene, and a hydrogenated or unhydrogenated polymer block B, which comprises a conjugated diene, wherein block copolymer (a) has a weight average molecular weight of 30,000 to 200,000;

an acrylic resin (b) which is a homopolymer of methyl methacrylate or a copolymer comprising methyl methacrylate as the major component and copolymerizable monomers selected from the group consisting of (meth)acrylic acid, metal salts of (meth)acrylic acid,

(meth)acrylic acid esters, vinyl acetate, aromatic vinyl compounds, maleic anhydride, maleimide compounds and mixtures thereof; and

optionally, a softener (c); and

wherein proportions (by mass) of respective components in the polymer composition are such that each of the following relationships (1) and (2) holds:

$$0.05 < W_b/W_a < 2 \quad (1) \text{ and}$$

$$W_c/(W_a + W_b + W_c) < 0.5 \quad (2)$$

wherein W_a , W_b , and W_c represent the amounts (by mass) of the block copolymer (a), the acrylic resin (b) and the softener (c), respectively.

See the specification at the paragraph bridging pages 16 and 17, combined with the disclosure at page 18, lines 16-17 and page 35, lines 3-18.

VI. GROUNDS OF REJECTION

Claims 1 and 4-10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over JP 11-246733 (Hiiro et al)¹ in view of U.S. 3,679,776 (Foss) or U.S. 5,219,961 (Zucchini et al) or U.S. 6,525,142 (Erickson et al).

VII. ARGUMENT

Claims 1 and 4-10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hiiro et al in view of Foss or Zucchini et al or Erickson et al. That rejection is untenable and should not be sustained.

¹ Tomoki is the first name of named coinventor Tomoki Hiiro.

As recited in Claim 1, the invention is a polymer composition, comprising:

a block copolymer (a) comprising a polymer block A, which comprises mainly an α -methylstyrene, and a hydrogenated or unhydrogenated polymer block B, which comprises a conjugated diene, wherein block copolymer (a) has a weight average molecular weight of 30,000 to 200,000;

an acrylic resin (b) which is a homopolymer of methyl methacrylate or a copolymer comprising methyl methacrylate as the major component and copolymerizable monomers selected from the group consisting of (meth)acrylic acid, metal salts of (meth)acrylic acid, (meth)acrylic acid esters, vinyl acetate, aromatic vinyl compounds, maleic anhydride, maleimide compounds and mixtures thereof; and

optionally, a softener (c); and

wherein proportions (by mass) of respective components in the polymer composition are such that each of the following relationships (1) and (2) holds:

$$0.05 < W_b/W_a < 2 \quad (1) \text{ and}$$

$$W_c/(W_a + W_b + W_c) < 0.5 \quad (2)$$

wherein W_a , W_b , and W_c represent the amounts (by mass) of the block copolymer (a), the acrylic resin (b) and the softener (c), respectively.

Hiiro et al discloses a resin composition comprising (a) an isobutylene-based block copolymer comprising an isobutylene-based polymer block and an aromatic vinyl-based block and (b) a thermoplastic resin, wherein the aromatic vinyl compound forming the aromatic vinyl compound-based block is comprised of at least one compound selected from the group consisting of α -methylstyrene, p-methylstyrene, vinyl naphthalene derivatives and indene derivatives ([0007]), and wherein the thermoplastic resin is selected from a relatively

long list of such resins ([0008]-[0020]), including methylmethacrylate polymers and copolymers ([0017]). Hiiro et al discloses further that their isobutylene-based block copolymer may include other cationically polymerizable monomers and lists “aliphatic series olefins, aromatic series vinyl, dienes, vinyl ether, silanes, vinylcarbazole, beta-pinene, and as acenaphthylene” as illustrative ([0047]). Hiiro et al further discloses that their isobutylene system block copolymer (a) is not limited with regard to molecular weight although a number average molecular weight of from 30,000 to 500,000 is desirable ([0032]); however, Hiiro et al discloses nothing about weight average molecular weight.

Finding that the disclosure of the term “dienes” in Hiiro et al does not indicate whether such dienes are conjugated or non-conjugated, the Examiner relies on any of Foss, Zucchini et al or Erickson et al for their respective disclosures of conjugated dienes. Foss is drawn to polymerization of conjugated dienes with a lithium-sodium alloy to obtain the corresponding lithiopolydiene. The Examiner particularly relies on the disclosure in Foss that “[b]utadiene and isoprene are the most preferred dienes because they are commercially available at low cost, are easy to obtain, and form good rubbers” (column 2, lines 43-46). The Examiner relies on similar disclosure in Zucchini et al with regard to butadiene being a lower cost material and producing a better quality product compared to other, non-conjugated dienes (column 4, lines 7-15), ignoring the fact that Zucchini et al is drawn to catalysts for preparing saturated elastomeric olefinic copolymers and terpolymers. Similarly, the Examiner relies on Erickson et al for a disclosure of the low cost and ready availability of isoprene and butadiene (column 3, lines 13-20), while ignoring the fact that Erickson et al is drawn to monohydroxylated diene polymers and epoxidized derivatives thereof. Thus, the Examiner relies on Foss, Zucchini et al and Erickson et al primarily for their disclosures of

the low cost and availability of certain conjugated dienes, while ignoring the other disclosures therein. Thus, the Examiner's rationale is that it would have been obvious to use a conjugated diene such as butadiene or isoprene as the diene in Hiiro et al based on cost and availability rationales.

In reply, without the present disclosure as a guide, one skilled in the art would not have looked to any of the above-three references for guidance. Hiiro et al does not disclose **why** other cationically polymerizable monomers would be used to form their isobutylene system block copolymer (a), only that they may be used if they do not spoil "performance". Why would one skilled in the art add such monomers? How would one know whether conjugated dienes such as butadiene or isoprene would not spoil performance? Clearly, there must be some motivation to do so. That butadiene or isoprene is readily available or of low cost, and may form a good product for the purposes of Foss, Zucchini et al or Erickson et al, is insufficient to provide such motivation, since there is no overlap between the objectives of Hiiro et al, which are a thermoplastic resin composition having excellent heat stability, shock resistance and compatibility, and the respective objectives of the other-applied references. Nor has the Examiner explained why one skilled in the art would single out α -methylstyrene as the aromatic vinyl-based block component, and methylmethacrylate homopolymers and copolymers as the thermoplastic resin component, of Hiiro et al.

The following replies to the Examiner's findings in the Advisory Action, in response to the above arguments.

The Examiner states that Foss, Zucchini et al and Erickson et al (the secondary references) have been cited for their disclosures of a low cost benefit in the use of butadiene, and other disclosures therein do not affect the motivation to lower the cost in Hiiro et al.

In reply, if it were clear what Hiiro et al's criteria were for their optional cationically polymerizable monomers, beyond that they do not spoil "performance," and if it were clear that conjugated dienes were contemplated, then low cost, as an additional criterion, might be a factor. But low cost cannot be a factor in the first instance when no stated positive reason is given for including such cationically polymerizable monomers.

The Examiner concedes that "[i]t is true that some picking and choosing" is necessary to arrive at the present invention based on Hiiro et al "but such picking and choosing is acceptable so long, as in the instant case it is not excessive."

In reply, non-excessive picking and choosing is **not** part of any legal test for obviousness. There is simply no motivation to do what the Examiner holds would have been obvious.

The Examiner finds that dienes are a member of the group that includes specific species such as β -pinene and it is not clear why β -pinene would be listed in Hiiro et al if it didn't work.

In reply, the Examiner's point is not understood. Nevertheless, β -pinene is **not** a diene, let alone a conjugated diene. Indeed, β -pinene, which has the chemical name (1S,5S)-6,6-dimethyl-2-methylenebicyclo[3.1.1]heptane, has only one double bond. Moreover, there is no question of whether dienes "will work." The question is whether the prior art provides motivation to do what Applicants have done. It does not.

While the Examiner finds that absolute predictability is not required but only a reasonable expectation of success, there must still be motivation to make the claimed invention. As discussed above, no such motivation exists herein.

Claims 4-5

Claims 4 and 5 are separately patentable, because neither Hiiro et al alone nor combined with the secondary references disclose or suggest making the resin composition of Hiiro et al into a stretchable material. While Applicants do not intend to be limited by the specific stretching methods disclosed in the specification at page 48, line 19ff, some processing is necessary to achieve stretchability. The applied prior art discloses and suggests no such property.

Claim 6

Claim 6 is separately patentable, because neither Hiiro et al alone nor combined with the secondary references disclose or suggest the stress value minimum under the conditions recited therein, let alone stretchability *per se*.

Claims 7-10

Claims 7-10 are separately patentable, because neither Hiiro et al alone nor combined with the secondary references disclose or suggest making a laminate. Applicants' disclosure in the specification at page 9 that laminates have been used in automobile parts does not supply the missing motivation from the applied prior art.

In the Advisory Action, the Examiner relies on the above-discussed disclosure at page 9 of the specification as an admission, finding that "patentees' [Hiiro et al's ?] goal is to make articles used in the automotive field."

In reply, that laminates have been used in automobile parts does not mean that it would have been obvious to make a laminate from Hiiro et al's resin composition. Moreover,

the use of the word “engine” in the English language translation of Hihiro et al appears to be an error. It is believed that the correct term is “engineering.”

For all the above reasons, it is respectfully requested that this rejection be
REVERSED.

VIII. CONCLUSION

For the above reasons, it is respectfully requested that all the rejections still pending in the Final Office Action be REVERSED.

Respectfully submitted,

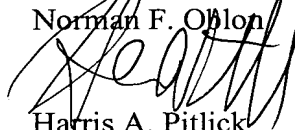
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CLAIMS APPENDIX

Claim 1: A polymer composition, comprising:

a block copolymer (a) comprising a polymer block A, which comprises mainly an α -methylstyrene, and a hydrogenated or unhydrogenated polymer block B, which comprises a conjugated diene, wherein block copolymer (a) has a weight average molecular weight of 30,000 to 200,000;

an acrylic resin (b) which is a homopolymer of methyl methacrylate or a copolymer comprising methyl methacrylate as the major component and copolymerizable monomers selected from the group consisting of (meth)acrylic acid, metal salts of (meth)acrylic acid, (meth)acrylic acid esters, vinyl acetate, aromatic vinyl compounds, maleic anhydride, maleimide compounds and mixtures thereof; and

optionally, a softener (c); and

wherein proportions (by mass) of respective components in the polymer composition are such that each of the following relationships (1) and (2) holds:

$$0.05 < W_b/W_a < 2 \quad (1) \text{ and}$$

$$W_c/(W_a + W_b + W_c) < 0.5 \quad (2)$$

wherein W_a , W_b , and W_c represent the amounts (by mass) of the block copolymer (a), the acrylic resin (b) and the softener (c), respectively.

Claim 4: A stretchable material, comprising:

the polymer composition according to claim 1.

Claim 5: The stretchable material according to claim 4, wherein the stretchable material is provided in the form of a film, strand, band, or nonwoven fabric comprising the polymer composition.

Claim 6: The stretchable material according to claim 4, wherein the stretchable material yields a 0.8MPa or larger stress when formed into a 1mm thick, No.2 dumbbell-molded sample piece, according to JIS K 6251, and stretched by 50% at a test speed of 20mm/min at 25°C, with the grip distance of 70mm, and gives a 50% or higher stress retention after held under the conditions for 2 hours.

Claim 7: A laminate, comprising:

a layer comprising the polymer composition according to claim 1, and

a layer comprising a different material.

Claim 8: The laminate according to claim 7, wherein the different material is a thermoplastic resin.

Claim 9: The laminate according to claim 8, wherein the different material comprises at least one thermoplastic resin selected from the group consisting of olefin-based resin, olefin-based thermoplastic elastomer, styrene-based thermoplastic elastomer, and a resin composition containing a styrene-based thermoplastic elastomer.

Claim 10: A laminate, comprising:

an outermost layer comprising the polymer composition according to claim 1, and

a layer comprising a different material.

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EVIDENCE APPENDIX

None.

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RELATED PROCEEDINGS APPENDIX

None.